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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Paul L. Hickman
IMMERSION CORPORATION
801 FOX LANE
SAN JOSE, CA 95131

EXAMINER

BRIER, JEFFERY A

ART UNIT

PAPER NUMBER

2672

DATE MAILED: 03/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/748,051

Applicant(s)

ROSENBERG ET AL.

Examiner

Jeffery A. Brier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 82, 83, 86, 88-99, 102-107 and 110-112 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 99, 104 and 105 is/are allowed.
- 6) ☒ Claim(s) 82, 97, 102, 103, 106, 107, 111 and 112 is/are rejected.
- 7) ☒ Claim(s) 83, 86, 88-96, 98, 100 and 111 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8. 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed on 02/11/2002 has been considered. It should be noted that Aoygi et al., U.S. Patent No. 5,694,153, was not considered in the parent patent nos. 6,201,533; 5,805,140; and 5,731,804, however, it has been considered by the examiner.

Response to Amendment

2. The amendment filed on 02/13/2002 has been entered. Claims 84, 85, 87, 100, 101, 108 and 109 have been cancelled. Claims 82, 83, 86, 88, 91, 96, 99, 106, 111 and 112 have been amended.

3. The amendments have overcome the rejections based upon the Strandh and the Salcudean references.

Drawings

4. The proposed drawing correction, filed on 02/13/02 has been approved and the substitute sheet of figure 12 filed on 02/13/02 has been inserted in the place of the 05/18/01 sheet of figure 12.

Response to Arguments

5. The arguments filed on 02/13/2002 have overcome the rejection based upon the Chuang reference.

6. The arguments filed on 02/13/2002 are not persuasive to overcome the rejection based upon 35 USC 112 first paragraph of claims 102 and 103. Applicant argues that:

the first member is 212b;

the second member is 210b;

the third member is 212a;

the fourth member is 210a;

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the second member 210b is coupled to ground 208; and

the fourth member 210a is coupled to ground 208.

A reading of claims 99 and 102 shows that applicants argued elements for the claimed members are incorrect. Elements 212a and 212b are flexing elements. Claims 99 and 102 clearly state that flex is provided between the second member and the first member and that flex is provided between the third member and the first member and between the third member and the fourth member. Thus, the first member cannot be element 212b because element 212b provides the flex between 216 and 210b and the third member cannot be element 212a because element 212a provides the flex between between elements 216 and 210a. In addition applicants selection for the first (212b), second (210b) and third (212a) members does not fulfill claim 99's limitation of "wherein said first, second and third members form a unitary member" since elements 212a and 212b are not directly connected in the meaning of unitary. Claims 99 and 102 are rewritten for convenience with the important limitation underlined.

99. (amended) A flexure linkage for providing motion to a user manipulatable object of an interface device, said interface device in communication with a computer system, said flexure linkage comprising:

a first member coupled to said user manipulatable object;

a second member coupled to said first member, wherein flex is provided between said second member and said first member; and

a third member coupled to said first member, wherein flex is provided between said third member and said first member, and wherein said first, second and third members form a unitary member;

wherein said flexure linkage provides at least two rotary degrees of freedom to said user manipulatable object about axes of rotation with respect to a ground such that said user manipulatable object can be moved by a user in said at least two rotary degrees of freedom and a position of said user manipulatable object in said two rotary degrees of freedom can be provided to said computer system.

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102. A flexure linkage as recited in claim 99 wherein said second member is coupled to a ground, and further comprising a fourth member coupled to said third member and to ground, wherein flex is provided between said third member and said fourth member.

Claim Objections

7. Claims 102, 103, 106 and 111 are objected to because of the following informalities:

Claim 102 claims

102. A flexure linkage as recited in claim 99 wherein said second member is coupled to a ground, and further comprising a fourth member coupled to said third member and to ground, wherein flex is provided between said third member and said fourth member.(emphasis added)

The underlined to ground should be changed to a ground in order to more clearly convey that ground 208 (figure 12) is two surfaces connected to grounded surface 206 described at page 30 lines 2 and 3 or applicant may wish to change to ground to "to said ground" .

Claim 106 claims a user manipulable object in line 1 which should be changed to user manipulatable object to correspond to the rest of the claim.

Claim 111 is objected to because at line 2 "said ground member" and "said first and second extension members" lacks antecedent basis in the claim and because at line 3 "said central members" lacks antecedent basis in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 111 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 111 is indefinite because at line 1 "said two axis of rotation" lacks antecedent basis in the claims. Applicants amendment to claim 111 caused "said two axis of rotation" to lack antecedent basis in the claim.

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 102 and 103 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 102 claims: *A flexure linkage as recited in claim 99 wherein said second member is coupled to a ground, and further comprising a fourth member coupled to said third member and to ground, wherein flex is provided between said third member and said fourth member.* Thus claim 102/99 claims third and fourth members as being flexible coupled and having the fourth member coupled to ground. The specification did not describe this. Figure 15 illustrates and pages 35 line 32 to page 36 line 24 describes three flexible members of the unitary member (212a, 212b, and either 212c or 212d). It is clear that the first, second, and third members correspond to members 216,

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210a, and 210b and that the fourth member corresponds to something not disclosed and that ground corresponds to 208. Thus claim 102/99 reads

99. (amended) A flexure linkage for providing motion to a user manipulatable object of an interface device, said interface device in communication with a computer system, said flexure linkage comprising:

a first member (216) coupled to said user manipulatable object (44);

a second member (210a) coupled to said first member (216), wherein flex (212a) is provided between said second member and said first member; and

a third member (210b) coupled to said first member (216), wherein flex (212b) is provided between said third member and said first member, and wherein said first, second and third members form a unitary member;

wherein said flexure linkage provides at least two rotary degrees of freedom to said user manipulatable object about axes of rotation with respect to a ground such that said user manipulatable object can be moved by a user in said at least two rotary degrees of freedom and a position of said user manipulatable object in said two rotary degrees of freedom can be provided to said computer system.

102. A flexure linkage as recited in claim 99 wherein said second member (210a) is coupled to a ground (208), and further comprising a fourth member (possibly 214a) coupled to said third member (210b) and to ground (208), wherein flex (NOT disclosed) is provided between said third member (210b) and said fourth member (214a).

It is clear from figure 15 and the specification that third member 210b and fourth member 214b do not have flex provided between themselves because bearings 214a is coupled by a shaft to element 210b. Bearings 214a is described at page 33 lines 27-30.

Claim 103 depends upon claim 102 and is not supported for the reasons given for claim 102.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 82, 97, 106, 107 and 112 are rejected under 35 U.S.C. 102(b) as being anticipated by Stern, U.S. Patent No. 4,994,669.

Stern describes a joystick with a unitary member composed of three members 36, 42 and the part of the 36 in the hole 32 at column 3 lines 39-44 and illustrates this unitary member in figure 5.

A detailed analysis of the claims follows.

Claim 82:

Stern teaches an interface apparatus for interfacing motion of a user with a computer System (column 2 line 6), said interface apparatus comprising: a user manipulatable object (38,70) physically contacted by said user and moveable by said user in at least two rotary degrees of freedom (rotary movement at least about the x and y axis); a linkage (36) coupled to said user manipulatable object (38) and providing said at least two rotary degrees of freedom to said user manipulatable object, each rotary degree of freedom being about an axis of rotation (x or Y), said linkage including a plurality of members (36, 42 and the part of 36 in hole 32), wherein a selected number of said plurality of members have been formed as a unitary member in which flex (column 3 line 42) is provided between said selected number of members (between 36 and 42), said flex permitting motion between said-selected number of members that allows motion of said user manipulatable object in at least one of said rotary degrees of freedom; and at least one sensor (48, 52, 54) able to detect a position or motion of said user manipulatable object along said at least two

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degrees of freedom and outputting sensor signals, wherein said sensor signals, or a representation thereof, are received by said computer system (column 2 line 6).

Claim 97:

Stern teaches an interface apparatus as recited in claim 82 wherein said user manipulatable object is a joystick handle (column 2 line 5 column 3 line 22).

Claim 106:

Stern teaches a method for interfacing motion of a user manipulable object (38) with a computer system (column 2 line 6), the method comprising: providing said user manipulatable object physically contacted by a user and moveable by said user; providing a linkage including a plurality of members (36 and 42); providing flex (column 3 line 42) between a selected number of said members to provide at least two rotary degrees of freedom (at least about the x and y axis) to said user manipulatable object about axes of rotation, wherein said selected number of members are formed as a unitary member (36 and 42 are unitary); and sensing a position or motion of said user manipulatable object in said at least two rotary degrees of freedom and outputting sensor signals (column 4 lines 35-45), wherein said sensor signals, or a representation thereof, are received by said computer system (column 4 lines 40-45 and column 2 line 6).

Claim 107:

Stern teaches a method as recited in claim 106 further comprising applying a force (flexural resistance or actuation force, column 3 lines 42 and 43) along at least one of said at least two degrees of freedom (the torque force is applied along the x or y axis) to said user manipulatable object (38) through said unitary member (36, 42).

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Claim 112:

Stern teaches an apparatus for interfacing motion of a user with a computer system, said apparatus comprising: user manipulation means (38, 70) physically contacted by said user and moveable by said user in at least two rotary degrees of freedom (about at least the x and y axis), linkage means (36 and 42) for providing said at least two rotary degrees of freedom to said user manipulatable object, said linkage means including a plurality of members (36, 42 and the part of 36 in hole 32) formed as a unitary member in which flex is provided between said members (column 3 line 42); and sensing means (48, 52, 54) for detecting a position or motion of said user manipulatable means along said at least two rotary degrees of freedom and outputting sensor signals (column 4 lines 35-45), wherein said sensor signals, or a representation thereof, are received by said computer system(column 4 lines 40-45 and column 2 line 6).

Allowable Subject Matter

13. Claims 83, 86, 88-96, 98, and 110 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 83 claims an electrically controlled actuator that applies force to the linkage, this is not taught or suggested by Stern. Claim 86 claims the linkage as a closed loop linkage which is not taught or suggested by Stern. Claim 110 claims the linkage as a closed loop linkage.

14. Claim 111 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claim 111 claims fixed and floating axis and claims extension members rotatable about the fixed axis and central members rotatable about the floating axis.

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15. Claims 99, 104 and 105 are allowed. Claim 99 claims the third member coupled to the first member and it is clear that in Stern part 36 in hole 32 is not coupled to part 36 opposite hole 32 and near knob 38.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery A. Brier whose telephone number is (703) 305-4723. The examiner can normally be reached on M-F from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (703) 305-4713).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

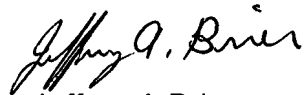
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or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Jeffery A Brier
Primary Examiner
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